

WHAT IS CLAIMED IS:

1. A mobile phone provided with a video camera comprising;

a phone body having a wireless transmitting and receiving function of an image and sound,

5 a virtual image optical display device for forming a virtual image on a retina of an eye of a user by passing image information from an image information driving part through an imaging optical system,

an arm foldably provided to the phone body through a hinge,

10 an eyepiece part of the virtual image optical display device provided to the arm,

15 a video camera part mounted to the phone body so that a direction of the eye of the user and a direction for taking an image are parallel or approximately parallel when the arm is opened, wherein

a length between a position of the phone body which is contact with the ear of the user and the hinge, an angle between the arm and the phone body when the phone is used, a length of the arm are determined so as to have ergonomically optimum relations with each other.

2. The mobile phone provided with a video camera according to claim 1, wherein

an imaging optical system of the virtual image optical display device is separated

20 into an optical system on an image information driving part side and an optical system on an eyepiece part side via a folding part, the optical system on an eyepiece part side is mounted on the arm foldably provided to the phone body through the hinge, and the optical system on an image information driving side and the image information driving part are mounted in the phone body.

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3. The mobile phone provided with a video camera according to claim 1, wherein
the virtual image optical display device is mounted in the arm.

4. The mobile phone provided with a video camera according to claim 1, wherein
when a position contact with an ear of the user is Pa, a center position of the
eyepiece lens of the optical system on an eyepiece part side is Pb, a point contact with
the phone body and the face of the user is Pd, a straight line passing through the
center position Pb of the eyepiece lens, horizontal to the eyepiece lens, and vertical to
an optical axis of the eyepiece lens is La, and a cross point of the straight line La and a
straight line Pa-Pd is Pe, a length between the position contact with the ear of the
user and the hinge of the phone body, an angle formed of the arm and the phone body
in using the phone, and a length of the arm are determined so that an angle α formed
of a straight line between both ears and the line Pa-Pe is in a range $80^\circ \leq \alpha \leq 90^\circ$.

10 5. The mobile phone provided with a video camera according to claim 1, wherein
positions of the arm, the phone body, and the hinge are set so that a ratio of a length
between the speaker part and the hinge of the phone body, and a length between an
optical axis of the eyepiece part and the hinge is in a range between 2:1 and 15:4.

15 6. The mobile phone provided with a video camera according to claim 1, wherein
the video camera part is rotatably mounted to the phone body.

20 7. The mobile phone provided with a video camera according to claim 1, wherein

a means for detecting an opening state of the arm is provided, and at least driving of the image information driving part is controlled depending on the opening state of the arm.

5 8. The mobile phone provided with a video camera according to claim 1, wherein
the phone body is formed of a first body part provided with at least the speaker part
and a second body part provided with a microphone so that the phone body is foldable,
and the arm including the virtual image optical display device is foldably mounted on
the second body part.

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9. A mobile phone comprising;
a phone body having a wireless transmitting and receiving function of an image and sound,
a virtual image optical display device for forming a virtual image on a retina of an eye of a user by passing image information from an image information driving part through an imaging optical system,
an arm foldably provided to the phone body through a hinge,
an eyepiece part of the virtual image optical display device provided to the arm, and
a key input part provided on the phone body, wherein
20 a cursor movement input means for moving a cursor displayed on the virtual image optical display device is provided on a side surface or a rear surface of the phone body.

10. The mobile phone according to claim 9, wherein

a direct-view-type display device is provided to the phone body on a same side
25 provided with the key input part, and information from the key input part is displayed

on the direct-view-type display device when text inputting by the key input part is selected.

11. The mobile phone according to claim 10, wherein

5 a next input requiring part is displayed on the direct-view-type display device after inputting information indicating completion of input to each part by the key input part in inputting letters in two or more parts sequentially.